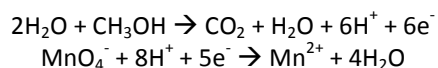


T09D01 – (9.2) Redox Equations

Name.....

1. 9.2.1 Deduce simple oxidation and reduction half-equations given the species involved in a redox reaction. (3)
 - a. Using $\text{Cr}_2\text{O}_7^{2-}$ as an example, demonstrate the steps for writing the proper half-reaction for oxidation:
 - i.
 - ii.
 - iii.
 - iv.
 - v.
 - vi.
 - b. Using HNO_2 as an example, demonstrate the steps for writing the proper half-reaction for reduction:
 - i.
 - ii.
 - iii.
 - iv.
 - v.
 - vi.
2. 9.2.2 Deduce redox equations using half equations. (3)
 - a. If given both the reduction and oxidation half equations, you should be able to balance and simplify the equations. A common example is the oxidation of a primary or secondary alcohol (via dichromate or manganate). Following Topic 10 again, if the half-equations for the oxidation of methanol (and reduction of manganate)



3. 9.2.3 Define the terms oxidizing agent and reducing agent. (1)

4. 9.2.4 Identify the oxidizing and reducing agents in redox equations. (2)

Reducing Agents (oxidized)		Oxidizing Agents (reduced)	
Hydrogen		Oxygen	
Carbon		Ozone	
Carbon Monoxide		Chlorine	
Metals		Acidified KMnO_4	
		Acidified $\text{K}_2\text{Cr}_2\text{O}_7$	
		Acidified H_2O_2	
		Metal Ions	
		Hydrogen Ions	
		MnO_2	

5. Often, chemical equations are difficult to balance based due to large and uneven numbers of reacting and produced species. A systematic approach using the principles of redox may allow you to balance such equations. Balance each of the following equations using this method:

